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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,227	11/30/2001	Jianmin Chen	95121961-201001	9224
23562	7590	10/20/2003	EXAMINER	
			JUBA JR, JOHN	
		ART UNIT		PAPER NUMBER
		2872		
DATE MAILED: 10/20/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

RJD

Office Action Summary	Application No.	Applicant(s)	
	10/000,227	CHEN ET AL.	
	Examiner	Art Unit	
	John Juba	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 August 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-31,33-49 and 54-59 is/are pending in the application.
- 4a) Of the above claim(s) 17-31 and 42-49 is/are withdrawn from consideration.
- 5) Claim(s) 39,40 and 54-59 is/are allowed.
- 6) Claim(s) 1,6,33 and 41 is/are rejected.
- 7) Claim(s) 2-5,7-16 and 34-38 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on 11 August 2003 is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action. FAX COPY NOT ACCEPTABLE.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Applicants' efforts to place this application in condition for allowance are noted with appreciation. However, the previous indication of claims 1, 6, 33, and 34 as containing allowable subject matter is withdrawn in light of newly discovered prior art. The examiner regrets the delay in applying these references, and apologizes for any inconvenience. A non-final action on the merits follows.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 33, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Ulffers. Referring to the embodiment wherein a polarizer is flanked by two pairs of birefringent foils (4th column, lines 12 – 21), Ulffers discloses at least three retarders imparting optical rotation of light of a first spectrum. Insofar as Ulffers teaches use of two foils in place of a first-order quarter-wave plate (described in the 2nd column, lines 13 – 15), it will be appreciated that the rotation is undertaken "substantially" without composite retardation. For example, Ulffers anticipates a phase retardation of one half

wavelength (6th column, line 40). Ulffers further anticipates a rotation of 90° (6th column, line 43).

With regard to claim 3, the fourth foil may be regarded as a "bias" retarder. Although the half-wave retardation embodiment relies upon two retarder films, Ulffers clearly teaches the equivalence of two *pairs* of retarders (*i.e.*, four foils).

Claims 1 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Damask (U.S. Patent number 6,577,445). Referring *for example* to Figure 3b and the associated text, Damask discloses a filter comprising (in addition to the principle birefringent plates) at least three retarders (312)(313) (ten are illustrated) which at least three retarders cause optical rotation to light of a first spectrum substantially without composite retardation (ideally zero thickness). In the method, filtering is performed by performing multiple rotations using these half-wave plate pairs (and further by introducing retardation using the principle plates).

Allowable Subject Matter

Claims 39, 40, and 54 – 59 are allowable over the prior art. Claims 2 – 5, 7 – 16, and 34 – 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art, taken alone or in combination, fails to teach or to fairly suggest *in*

combination, at least three retarders rotating a first band of wavelengths substantially without composite retardation, or a method using at least three retarders to rotate substantially without composite retardation, particularly wherein

the at least three retarders are isotropic to light of a second spectrum, as recited in claims 2 - 5;

the optical rotation of the at least three retarders is achromatic in the first spectrum, as recited in claims 7 and 34;

the at least three retarders have a substantially wavelength-stable eigenpolarization, as recited in claims 8 and 35;

the at least three retarders are in an optical filter further comprising a beam splitter, as recited in claims 9 – 15;

the method further includes separating light into two different paths, as recited in claims 36 – 38; or

the at least three retarders are in a combination further comprising a bias retarder to make the combination have substantially no retardation, as recited in claim 16.

As previously indicated, the prior art fails to teach or fairly suggest a method comprising the step of rotating a first band of wavelengths without retardation further comprising either

transmitting a second band of wavelengths substantially unaltered, as recited in claim 40, or

performing the rotating step substantially independent of skew ray direction and after a first separating step and before a second separating step, as recited in claim 39.

Also as previously indicated, the prior art fails to teach or to fairly suggest a method or arrangement in which light is polarized, retarded with an out-of-plane retarder, and split, as recited in claims 54 and 58.

Response to Amendment

Applicants' submission of a new declaration is noted with appreciation as overcoming the previous defect.

Applicants' amendment is sufficient in overcoming the informalities previously noted in the specification.

Applicants' amendment and remarks are sufficient in overcoming the previous objection to claims 1 – 16, 32 – 41, and 58. When read in light of the specification, the meaning of rotation undertaken "substantially without introducing composite retardation" is clear, and such an expression would not be regarded as a misnomer. It is further noted that, whereas 10,000 nm of retardation is regarded as excessive retardation (para. [0053]), an aggregate retardation of 250 nm (para. [0103]) is not. Further, it is clear from Applicants' claim construction (*vis à vis* claim 3) that "about a half wave of retardation" is still regarded as being "substantially" without composite retardation.

Applicants' amendment of claim 41 is sufficient in overcoming the previous rejection thereof under 35 U.S.C. §102(b) as being anticipated by Bührer (U.S. Patent

number 4,991,938). The cancellation of claim 32 obviates its continued rejection on these grounds.

Applicants' cancellation of claims 50 and 51 obviates their continued rejection under §102(b) as being anticipated by Louis.

Applicants' cancellation of claims 52 and 53 obviates their continued rejection under §102(e) as being anticipated by Miller.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bryars discloses a method of splitting light into two paths and introducing skew ray compensation. However, the method clearly relies upon introducing a non-zero composite retardation.

Buhrer (U.S. Patent number 4,772,104) discloses achromatic composite wave plates comprising a plurality of retarders.

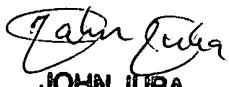
Bond discloses achromatic composite wave plates comprising a plurality of retarders.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (703) 308-4812. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn can be reached on Mon.- Thu., 9 - 5.

The centralized fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JOHN JUBA
PRIMARY EXAMINER

Art Unit 2872

October 6, 2003